ASSIGNMENT 2

Textbook Assignment: "Geometric Construction," chapter 2, pages 2-1 through 2-57.

2-1. How should you represent a point on paper?

1. Intersecting lines
2. Short cross hairs
3. Short cross bars
4. All of the above

2-2. What term refers to lines that remain equidistant along their entire length?

1. Parallel
2. Perpendicular
3. Angular
4. Rectilinear

2-3. Which of the following degrees of angularity indicates that the angle is obtuse?

1. 105°
2. 90°
3. 88°
4. 45°

2-4. Which of the following pairs of angles are supplementary?

1. 45 and 45
2. 45 and 135
3. 65 and 100
4. 65 and 25

2-5. What is the term for an angle with less than 90 degrees of angularity?

1. Straight
2. Obtuse
3. Acute
4. Right

2-6. What term may you correctly apply to lines that bisect isosceles triangles perpendicular to the base dividing the vertex into equal halves?

1. Side
2. Perpendicular
3. Scalene
4. Hypotenuse

2-7. Altitude refers to what part of a triangle?

1. Its sides
2. Its base
3. Its height
4. Its hypotenuse

2-8. What is the third degree of angularity for a triangle with a vertex of 88 degrees and base angle of 45 degrees?

1. 18°
2. 45°
3. 23°
4. 47°

2-9. What type of triangle would have a vertex of 88 and a base angle of 45 degrees?

1. Equilateral
2. Isosceles
3. Scalene
4. Equiangular

2-10. What is the degree of angularity of the vertex in an equilateral triangle?

1. 60°
2. 45°
3. 30°
4. 90°

2-11. What is the degree of angularity for the angle opposing the hypotenuse of a right triangle?

1. 90°
2. 60°
3. 45°
4. 30°

2-12. What is the degree of angularity at the vertex for an isosceles triangle with base angles of 45 degrees?

1. 90°
2. 60°
3. 45°
4. 30°

2-13. Which of the following shapes is a quadrilateral with equal opposing sides and equal opposing angles?

1. Trapezoid
2. Square
3. Rectangle
4. Rhomboid

2-14. Which of the following geometric shapes is a quadrilateral but not a parallelogram?

1. Rhomboid
2. Trapezium
3. Square
4. Rectangle

2-15. What is the term for a rectilinear geometric shape that contains no equal sides or angles and no parallel sides?

1. Trapezium
2. Trapezoid
3. Ellipse
4. Circle

2-16. Which of the following geometric shapes is also a regular polygon?

1. Nonagon
2. Dodecagon
3. Equilateral triangle
4. Rectangle

2-17. How many sides does a heptagon contain?

1. 7
2. 6
3. 5
4. 4

2-18. What is the name of a lo-sided polygon?

1. Pentagon
2. Dodecagon
3. Decagon
4. Nonagon

2-19. What is the length of the radii in a circle with a diameter of 60mm?

1. 10mm
2. 60mm
3. 30mm
4. 45mm

2-20. The portion of a circle between two given radii at 36 degrees angularity, including the bound portion of the circumference, is known by what term?

1. Sectors
2. Secants
3. Chords
4. Arcs

2-21. What term refers to multiple circles that do not share a common center?

1. Inscribed
2. Concentric
3. Circumscribed
4. Eccentric

2-22. A line of infinite length tangent to the inner most circle in a nest of four concentric circles has what relationship to the remaining three circles?

1. It is a chord
2. It is a secant
3. It is a sector
4. It is a diameter

2-23. An arc is a part of the curved segment of a circle bound by but not including two radii.

1. True
2. False

2-24. The Spiral of Archimedes is created by uniformly increasing or decreasing the distance from the center of what geometric element?

1. Letters
2. Radii
3. Points
4. Locus

2-25. What term refers to the plane surfaces of polyhedra?

1. Sides
2. Faces
3. Triangles
4. Cubes

2-26. What is a parallelepiped?

1. A prism with three parallel lateral faces, oblique truncated bases, and oblique altitudes
2. A solid with opposing bases, one lateral face, and one oblique face
3. A solid with bases composed of equal parallelogram-shaped regular polygons and three or more parallel lateral faces
4. A prism with oblique hexagonal bases

2-27. A generatrix of a right circular cylinder is equal in length to what other cylindrical component?

1. The base
2. The directrix
3. The helix
4. The altitude

2-28. What is the difference between a truncated pyramid and a frustum?

1. The truncated pyramid is oblique and the frustum is parallel to the base
2. The truncated pyramid is parallel and the frustum is oblique to the base
3. The truncated pyramid does not have a vertex and the frustum does
4. The truncated pyramid has an oblique altitude and the altitude of a frustum is perpendicular

2-29. What is the definition of a parabola?

1. The intersection of a cone at a lesser angle than the element
2. The intersection of a cone parallel to the element and oblique to the axis
3. The intersection of a cone oblique to both the axis and element
4. The intersection of a cone perpendicular to the axis

2-30. When you bisect a circular arc, to what distance should you set the compass?

1. Exactly one half the length of the arc
2. Twice the length of the arc
3. Greater than one half the length of the arc
4. Less than one half the length of the arc

2-31. When you bisect an angle, where should you draw the bisecting line?

1. Through the angle
2. Through the apex of the angle to the intersecting arcs
3. Perpendicular to one leg of the angle
4. At equal distance from the radius arcs

2-32. When dividing any given line into equal or proportional parts, what part of the scale should you place at the beginning of the given line?

1. The estimated length of the given line
2. The 1 inch mark
3. The first fully divided increment on the scale
4. The 0 on the scale

2-33. When drawing a circle tangent to a line at a particular point, what measurement should you lay off at that particular point?

1. The locus
2. The diameter of the circle
3. The estimated size of the circle
4. The radius of the circle

2-34. What method should you use to draw small radii arcs less than $5/8^{th}$ inch by tangency construction?

1. Compass
2. Transference
3. Circle templates
4. Freehand

2-35. What term refers to taking measurements from the horizontal diameter of the circle while using the circumscribed method of polygonal construction?

1. Across the planes
2. Across the flats
3. Across the diameters
4. Across the corners

2-36. Drawing geometric figures around a circle is known as what method of polygonal construction?

1. Transcribed
2. Circumscribed
3. Inscribed
4. Prescribed

2-37. What drawing tool should you use in the preferred method of triangle construction?

1. Proportional scales
2. Triangles
3. Straightedges
4. Ames instrument

2-38. What drawing tool should you use to draw a triangle with a base angle of 40 degrees?

1. A triangle
2. A proportional scale
3. A protractor
4. An ames instrument

2-39. When constructing a square using the circumscribed method, to what is the diameter of the circle equal?

1. The distance across the corners
2. The sum of two isosceles triangles
3. The area of a circle
4. The distance across the flats

2-40. To construct an octagon using the circumscribed method of construction, you should take what action first?

1. Draw a square
2. Draw a circle
3. Draw diagonals
4. Draw intersecting horizontal and vertical lines

2-41. When constructing a square using the circumscribed method, from where are the sides of the square drawn?

1. The points where the diameters intersect the circle
2. The point where the compass intersects the paper
3. Around the outside of the circle
4. Anywhere a square can be drawn

2-42. Where you are using the inscribed method of constructing a square, where should you locate the circle?

1. Outside the square
2. Inside the square
3. Adjacent to the square
4. On top of the square

2-43. When you use a set of dividers to construct a pentagon, how is the circumference of a given circle divided?

1. With a scale
2. With a protractor
3. By trial and error
4. With mathematical computations

2-44. What polygon can you construct using only a combination of 30/60/90- and 45-degree triangles?

1. Nonagons
2. Octagons
3. Decagons
4. Dodecagons

2-45. To construct a hexagon using either of the preferred methods, you should use what type of triangle?

1. 45 degree
2. 30/60/90 degree
3. Adjustable
4. A transparent triangle

2-46. What is the common degree of angularity in a nonagon?

1. 10°
2. 20°
3. 30°
4. 40°

2-47. What is the common degree of angularity in a heptagon?

1. 35.6°
2. 21.7°
3. 51.3°
4. 40.2°

2-48. If the minor axis of an ellipse is 40mm, what must be the major axis?

1. 60mm
2. 30mm
3. 35mm
4. 40mm

2-49. One method of determining the foci of an ellipse is to use the diameter of a semicircle equal to the major axis of the ellipse.

1. True
2. False

2-50. Using the foci method of ellipse construction, you should plot what minimum number of points along the axis to increase accuracy?

1. 5
2. 2
3. 3
4. 4

2-51. What are the foci of an ellipse?

1. A series of intersecting arcs
2. A series of points along a circumference
3. Two points on the major axis
4. Two points on the minor axis

2-52. When you use the foci method of constructing an ellipse, what is your second step?

1. Locating the axes
2. Locating the center
3. Locating the foci
4. Locating the measurement of one half the major axis

2-53. Refer to figure 2-47 in the TRAMAN. To plot the second set of points on the circumference of an ellipse, where do you position the compass?

1. Point A2
2. Point B2
3. Points CB2 and DB2
4. Points F and F1

2-54. What drawing tool should you use to plot a series of points to construct an ellipse?

1. A straightedge
2. A scale
3. A protractor
4. A trammel

2-55. The diameters of the concentric circles represent what element of an ellipse?

1. The circumference
2. The foci
3. The trammel
4. The major and minor axes

2-56. Using the conjugate diameter method of ellipse construction, the initial two lines drawn are the diameters of the concentric circles perpendicular to each other.

1. True
2. False

2-57. When you are using the parallelogram method of ellipse construction, what is true of the sides of the parallelogram?

1. The sides must be perpendicular
2. The sides must be parallel
3. The sides must be tangent
4. The sides must be equal